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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,596	01/24/2005	Patrick Ziegler	860-011847-US(PAR)/200104	4759

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FAIRFIELD, CT 06824

EXAMINER	
LEE, PATRICK J	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/500,596	ZIEGLER ET AL.	
	Examiner	Art Unit	
	Patrick J. Lee	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,7-10 and 12-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7-10 and 12-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to amendment filed October 17, 2006.

Claim Objections

2. Claim 7 is objected to because of the following informalities:

With respect to claim 7, the amendment of October 17, 2006 properly addressed the 35 USC 101 issue by changing "data carrier" to "computer readable medium". However, the word "preferably" should be deleted because it leaves the door open for the program to not be stored on a computer readable medium.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 7-9, 13-15, & 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,376,830 B1 to Froggatt et al.

With respect to claim 1, Froggatt et al disclose a device comprising: optical coupler (306) for splitting an initial measurement signal produced by tunable laser (302) into two measurement signals (354, 356); polarization beam splitters (30, 32) for coding the measurement signals (354, 356) with a code; and detector (340) for detecting the reflected and transmitted signals from device under test (21). Froggatt et al disclose one coded signal (354) being fed into device under test (21) in one direction, with a first code and other coded signal (356) being fed into device under test (21) in the other direction with a second code. Froggatt et al also disclose the detector (340) receiving a reflected signal in response to first coded signal (354) and a transmitted signal in response to second coded signal (356). Froggatt et al disclose detectors (340) being replaced by a combination of a polarization beam splitter (34) and optical detectors (36, 38) – the polarization beam splitter (34) being disposed right before the optical detectors would serve to decode the received signal. As there is no definition as to what is being coded into the signal by the claim, the application of a polarization by polarization beam splitters (30, 32, 34) would suffice as a coding of a light signal. While Froggatt et al does not explicitly state the use of polarization beam splitters (30, 32) for coding and polarization beam splitter (34) for decoding in the same embodiment, such would have been obvious to one of ordinary skill in the art because such would allow for the ability

of the device to accurately determine the effect of the DUT on the polarization by accurately ascertaining the polarization of the entering and the exiting radiation.

With respect to claim 7, the modified Froggatt discloses the use of processor (124) to process the detected signals. To utilize a program on a computer readable medium would have been obvious to one of ordinary skill in the art because such would allow for ease in retrieving the program to properly operate the device and accurately determine the effect of the DUT on the radiation.

With respect to claim 8, the modified Froggatt et al does not explicitly disclose a software program, but such would have been obvious to one of ordinary skill in the art in order to automate the process as much as possible to prevent any human error.

With respect to claim 9, Froggatt et al disclose a device comprising: optical coupler (306) as a device for splitting an initial measurement signal produced by tunable laser (302) into two measurement signals (354, 356); polarization beam splitters (30, 32) as coding devices for coding the measurement signals (354, 356) with a code; and detector (340) as receiving elements for detecting the reflected and transmitted signals from device under test (21). For feeding elements, Froggatt et al disclose one coded signal (354) being fed into device under test (21) in one direction, with a first code and other coded signal (356) being fed into device under test (21) in the other direction with a second code. Froggatt et al also disclose the detector (340) receiving a reflected signal in response to first coded signal (354) and a transmitted signal in response to second coded signal (356). Froggatt et al disclose detectors (340) being replaced by a combination of a polarization beam splitter (34) and optical detectors (36, 38) – the

polarization beam splitter (34) being disposed right before the optical detectors would serve to decode the received signal. As there is no definition as to what is being coded into the signal by the claim, the application of a polarization by polarization beam splitters (30, 32, 34) would suffice as a coding of a light signal. While Froggatt et al does not explicitly state the use of polarization beam splitters (30, 32) for coding and polarization beam splitter (34) for decoding in the same embodiment, such would have been obvious to one of ordinary skill in the art because such would allow for the ability of the device to accurately determine the effect of the DUT on the polarization by accurately ascertaining the polarization of the entering and the exiting radiation.

With respect to claim 13, the modified Froggatt et al does not explicitly disclose the balancing of optical path lengths through unit under test (21), but such would have been obvious to one of ordinary skill in the art in order to allow the device to prevent any interference of signals that could prevent obtaining an accurate signal representative of the condition of the device under test (21).

With respect to claim 14, the modified Froggatt et al does not explicitly disclose the use of a polarization diversity receiver, but such would have been obvious to one of ordinary skill in the art in order to account for the polarization changes imposed by polarizing beam splitters (30, 32).

With respect to claim 15, the modified Froggatt et al does not explicitly disclose the use of frequency selective detection, but such would have been obvious to one of ordinary skill in the art as to allow for the device to obtain an accurate measurement.

With respect to claim 18, the modified Froggatt et al does not explicitly disclose the balancing of optical path lengths through unit under test (21), but such would have been obvious to one of ordinary skill in the art in order to allow the device to prevent any interference of signals that could prevent obtaining an accurate signal representative of the condition of the device under test (21).

With respect to claim 19, the modified Froggatt et al does not explicitly disclose the use of a polarization diversity receiver, but such would have been obvious to one of ordinary skill in the art in order to account for the polarization changes imposed by polarizing beam splitters (30, 32).

With respect to claim 20, the modified Froggatt et al does not explicitly disclose the use of frequency selective detection, but such would have been obvious to one of ordinary skill in the art as to allow for the device to obtain an accurate measurement.

6. Claims 10 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,376,830 B1 to Froggatt et al in view of US 5,764,348 to Bloom.

Froggatt et al disclose the device as described in the discussion of claims 1, 7-9, 13-15, & 18-20 above.

With respect to claim 10, Froggatt et al does not explicitly disclose the use of a switch to sequentially feed one part of the measurement signal to a first path and a second path, but such is disclosed by Bloom through the use of switch (22a). To modify the teachings of Froggatt et al with those of Bloom would have been obvious to one of ordinary skill in the art because such would allow for additional control over the radiation

emitted on the device under test and to prevent any confusion as to where the light is being produced.

With respect to claim 17, the modified Froggatt et al does not explicitly disclose the use of a reference arm for deriving a first and second reference signal. But Bloom discloses the use of loopback fiber (60) as a reference loop in order for feedback control. To modify the teachings of Froggatt et al in order to incorporate a reference arm would have been obvious to one of ordinary skill in the art because such would ensure for accurate operation of the device.

7. Claims 12, 16, & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,376,830 B1 to Froggatt et al in view of US 6,426,792 B1 to Yamashita.

Froggatt et al disclose the device as described in the discussion of claims 1, 7-9, 13-15, & 18-20 above.

With respect to claim 12, Froggatt et al does not explicitly disclose the modulation of the first and second signals with first and second frequencies, but such is disclosed by Yamashita. Yamashita discloses the use of optical modulators (15a, 15b) to control modulate light coming from sources (12-13). Such a modification of the device taught by Froggatt et al would have been obvious to one of ordinary skill in the art in order to allow the device to perform the comparison of phase and measurement of chromatic dispersion.

With respect to claim 16, Froggatt et al does not explicitly disclose the modulation of the first and second signals with first and second frequencies, but such is disclosed by Yamashita. Yamashita discloses the use of optical modulators (15a, 15b)

to control modulate light coming from sources (12-13). Such a modification of the device taught by Froggatt et al would have been obvious to one of ordinary skill in the art in order to allow the device to perform the comparison of phase and measurement of chromatic dispersion.

With respect to claim 21, Froggatt et al disclose a device comprising: optical coupler (306) for splitting an initial measurement signal produced by tunable laser (302) into two measurement signals (354, 356); polarization beam splitters (30, 32) for coding the measurement signals (354, 356) with a code; and detector (340) for detecting the reflected and transmitted signals from device under test (21). Froggatt et al disclose one coded signal (354) being fed into device under test (21) in one direction, and other coded signal (356) being fed into device under test (21) in the other direction. Froggatt et al also disclose the detector (340) receiving a reflected signal in response to first coded signal (354) and a transmitted signal in response to second coded signal (356). Froggatt et al does not explicitly disclose the modulation of the first and second signals with first and second frequencies, but such is disclosed by Yamashita. Yamashita discloses the use of optical modulators (15a, 15b) to control modulate light coming from sources (12-13). Such a modification of the device taught by Froggatt et al would have been obvious to one of ordinary skill in the art in order to allow the device to perform the comparison of phase and measurement of chromatic dispersion.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 7-10, & 12-21 have been considered but are moot in view of the new ground(s) of rejection.

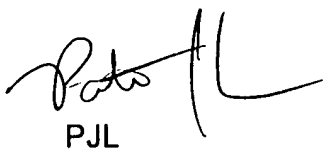
Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (571) 272-2440. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patrick J. Lee
Examiner
Art Unit 2878



PJL
October 30, 2006